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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/401,074	09/22/1999	AMIT VERMA	4449	4152

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EXAMINER

RYMAN, DANIEL J

ART UNIT

PAPER NUMBER

2665

DATE MAILED: 03/24/2004

16

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/401,074

Applicant(s)

VERMA ET AL.

Examiner

Daniel J. Ryman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7 is/are allowed.
- 6) ☒ Claim(s) 9-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant's arguments with respect to claims 9-13 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tellado et al (USPN 6,314,146) in view of Kotzin et al (USPN 5,796,722).
4. Regarding claim 13, Tellado discloses sampling the symbols to be transmitted of the frame (col. 6, lines 33-40); comparing the magnitudes of the samples to a threshold to determine if the samples violate the threshold (col. 8, lines 6-14); determining an upper limit correction value for each symbol (col. 8, lines 6-14) where the upper limit of the correction value is the value needed to negate the frame's peak to below the threshold; computing a peak reduction kernel responsive to the upper limit correction values (col. 9, line 23-col. 10, line 12); responsive to determining a sample magnitude does violate the predetermined threshold, applying the kernel to the sample to reduce the peak (col. 9, lines 23-34 and col. col. 10, lines 8-12); and transmitting the modified symbol to a receiver unaware of the method for minimizing the peak to average power ratio (col. 3, lines 6-20). Tellado does not disclose that the predetermined threshold is selectable to control the number of samples violating the threshold. Kotzin teaches, in a

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multicarrier system, having a threshold selectable to control the number of metrics violating the threshold in order to add flexibility to the system (col. 4, lines 54-64). It would have been obvious to one of ordinary skill in the art at the time of the invention to have the threshold be selectable to control the number of samples violating the threshold in order to add flexibility to the system. Tellado also does not disclose that the upper limit correction value is selectable to control an amount of signal to noise ratio deterioration because Tellado's method is designed such that it does not affect the signal to noise ratio. However, Tellado recognizes that the correction values will affect the signal to noise ratio unless measures are taken to design around this problem (col. 2, lines 53-61). Kotzin teaches, in a multicarrier system, having a value selectable to control the quality of a communication link in order to add flexibility to the system (col. 4, lines 54-64). It would have been obvious to one of ordinary skill in the art at the time of the invention to have the upper limit correction value be selectable to control an amount of signal to noise ratio deterioration in order to add flexibility to the system.

5. Regarding claim 9, referring to claim 13, Tellado in view of Kotzin discloses that computing a peak reduction kernel responsive to the upper limit correction values comprises: determining a phase component and an amplitude component of the upper limit correction values and setting the phase component of the upper limit correction values to zero to ensure that the peak reduction kernel has its peak value at the first sample of the frame (Tellado: col. 7, lines 1-6) where the phase of the peak reduction frequencies which have their magnitude set by the upper limit correction value (vector c) can be initialized to zero which effectively sets the phase component of the upper limit correction value to zero since the upper limit correction value is the value for the peak reduction frequency.

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6. Regarding claim 10, referring to claim 13, Tellado in view of Kotzin discloses that applying the peak reduction kernel to the sample to reduce the peak of the sample comprises: rotating the peak reduction kernel by an amount to ensure a peak of the peak reduction kernel coincides with a peak of the frame (Tellado: col. 10, lines 8-12); determining whether the peak of the peak reduction kernel has a sign equal to a sign of the peak of the frame (Tellado: col. 9, lines 18-25 and col. 10, lines 8-25, esp. lines 13-15); responsive to the signs of the peaks of the peak reduction kernel and the frame being equal, multiplying the peak reduction kernel by minus one (Tellado: col. 9, lines 18-25 and col. 10, lines 8-25, esp. lines 13-15); and adding the peak reduction kernel to the samples to reduce the peak of the frame (Tellado: col. 8, lines 24-36 and col. 9, lines 18-25).

7. Regarding claim 11, referring to claim 13, Tellado in view of Kotzin discloses applying the peak kernel to the sample where the kernel has a magnitude scaled to the extent that the frame's magnitude exceeds the threshold (Tellado: col. 10, lines 8-24, esp. lines 15-20).

8. Regarding claim 12, referring to claim 11, Tellado in view of Kotzin discloses that the magnitude of each kernel is equal to one and that the sum of the magnitudes of the kernels equals the number of corrections values (Tellado: col. 9, lines 65-67 and col. 11, lines 62-63). Tellado in view of Kotzin possibly does not expressly disclose that the scaling factors are chosen to ensure a sum of the magnitudes of the kernels applied is equal to one. However, it is generally considered to be within the ordinary skill in the art to adjust, vary, select, or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on applicant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471

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(1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1055); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Since Tellado in view of Kotzin discloses that the sum of the magnitudes of the kernels equals a number, any value for the sum would have been obvious absent a showing of criticality by Applicant.

Allowable Subject Matter

9. Claims 1-7 are allowed. Regarding claim 1, the examiner did not find support in the prior art for having a net penalty function determined with a gradient being computed from this net penalty function.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (703)305-6970. The examiner can normally be reached on Mon.-Fri. 7:00-5:00 with every other Friday off.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (703)308-6602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel J. Ryman
Examiner
Art Unit 2665

DJR

Daniel J. Ryman


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